Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 4.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS

This Amendment is in response to the Office Action mailed November 3, 2004, in which the Examiner objected to the drawings.

The Examiner rejected claims 1-3 and 9 as allegedly anticipated by Cieri *et al.* (U.S. Patent No. 5,093,804).

The Examiner rejected claims 10-27 over Cieri '804 in view of Fordham *et al.* (U.S. Patent No. 5,136,528.

With respect to the drawing objections, Applicants have amended Fig. 4 to show the interconnection of the various elements. No new matter has been added. It is believed unnecessary to illustrate separate drawing figures as suggested by the Examiner. Entry of the drawing change proposal is respectfully requested.

The Examiner's rejection of the claims is respectfully traversed for the reasons set forth below.

The Examiner has rejected claims 1-3 and 9 over Cieri *et al.* According to the Examiner, the switch processor, the plurality of signal conditioning circuits and the switch referred in claim 1 is allegedly found in Cieri *et al.* However, Cieri does not employ a switch processor, signal conditional circuits or a switch as disclosed in the present application. Cieri *et al.* employs an Application Specific Integrated Circuit (ASIC), which is a custom designed and custom manufactured integrated circuit built for this specific application. Applicants believe that the Examiner may not point to certain hardware elements in the reference, which are different than the hardware elements in the application and claim that they are equivalent structures.

Applicants have discovered a programmable component, namely a switch processor, which has selected inputs coupled to the signal conditioning circuits and has an output for driving the switch. The arrangement in Fig. 4 of the present invention functions in a similar way to the arrangement in Cieri *et al.* so that identical inputs to the circuit and

Cieri *et al.* and to the circuit in the present invention will produce identical outputs. However, the hardware for performing the function is different in the present invention than the hardware in the reference. Thus, it is believed that the Examiner may not employ the reference as anticipating the invention.

The Examiner has rejected independent claims 11, 20, and 23 over Cieri *et al.* in view of Fordham. The Examiner uses the same argument in each rejection, thus the rejections will be considered together for purposes of this response.

In his response, the Examiner makes three statements. First, that Cieri does not expressly disclose that the multi bit digital signal is determined by firmware loaded on the switch processor. However, the Examiner asserts that Cieri *et al.* discloses a switch processor and that there is a coding means to help the switch processor to perform it job. Thus, the Examiner asserts that Fordham *et al.* discloses that it is known in the art to have firmware with a switch processor.

Applicants believe that the second statement asserted by the Examiner is not a correct interpretation of the reference. In Cieri *et al.* there is coding means. However, the "coding means" described is in the form of a protocol and is not similar to thefirmware coding of procedure or instructions described in the invention. The cited portion of Cieri '804 is from claim 9, which says that the coding means receives status signals and is responsive thereto to produce a diagnostic signal which is updated on each frame of the control signal and the first selected means for transmitting the signal diagnostic to the operation controller on each frame of the control signal. In contrast, the present invention uses firmware to direct operation of the switch processor. Therefore, the function cited by the Examiner for the so-called coding means is entirely different than the function of the firmware associated with the present invention.

It should also be understood that although the Fordham *et al.* reference uses the term "switch processor", it does not mean the same thing as the "switch processor" in the application.

In the Fordham *et al.* reference, the switch processor formulates address messages, which are fed via a bus to column decoders, which in turn serve as an indication that address information on the bus is intended as coded addresses. The switch processor continually polls each of the switches in a matrix. The switch processor takes control of the internal data and address busses and provides address information on the address bus and selectively address the column lines. Col 12, line 22, col. 13, line 25. In the present invention, the switch processor controlls the switches and provides status information regarding the switches. This is an entirely different function. Accordingly, although the reference refers to a "switch processor", it has an entirely different function and operation than the "switch processor" of the invention. Indeed, it is only accidental and irrelevant that they have the same designation. They have different functions. Thus the combination of the apparatus of Fordham with the arrangement of Cieri would not work or perform as intended.

The argument asserted by the Examiner with respect to the independent claims 10, 21, and 24 is essentially the same. Accordingly, it is requested that the rejection be withdrawn. Further, Applicants believe that any application of the rejection to claim 1 would likewise fail for the same reason.

New claim 28 is similar to claim 21 with an additional reference to firmware loaded on the switch processor. It is believed to be patentable for the reason set forth hereinabove.

In view of the foregoing, it is respectfully requested that the Examiner reconsider his rejection of the claims, the allowance which is earnestly solicited.

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If filing this paper or any accompanying papers necessitates additional fees not otherwise provided for, the undersigned authorizes the Commissioner to deduct such additional fees from Deposit Account No. 04-2223.

Respectfully submitted,

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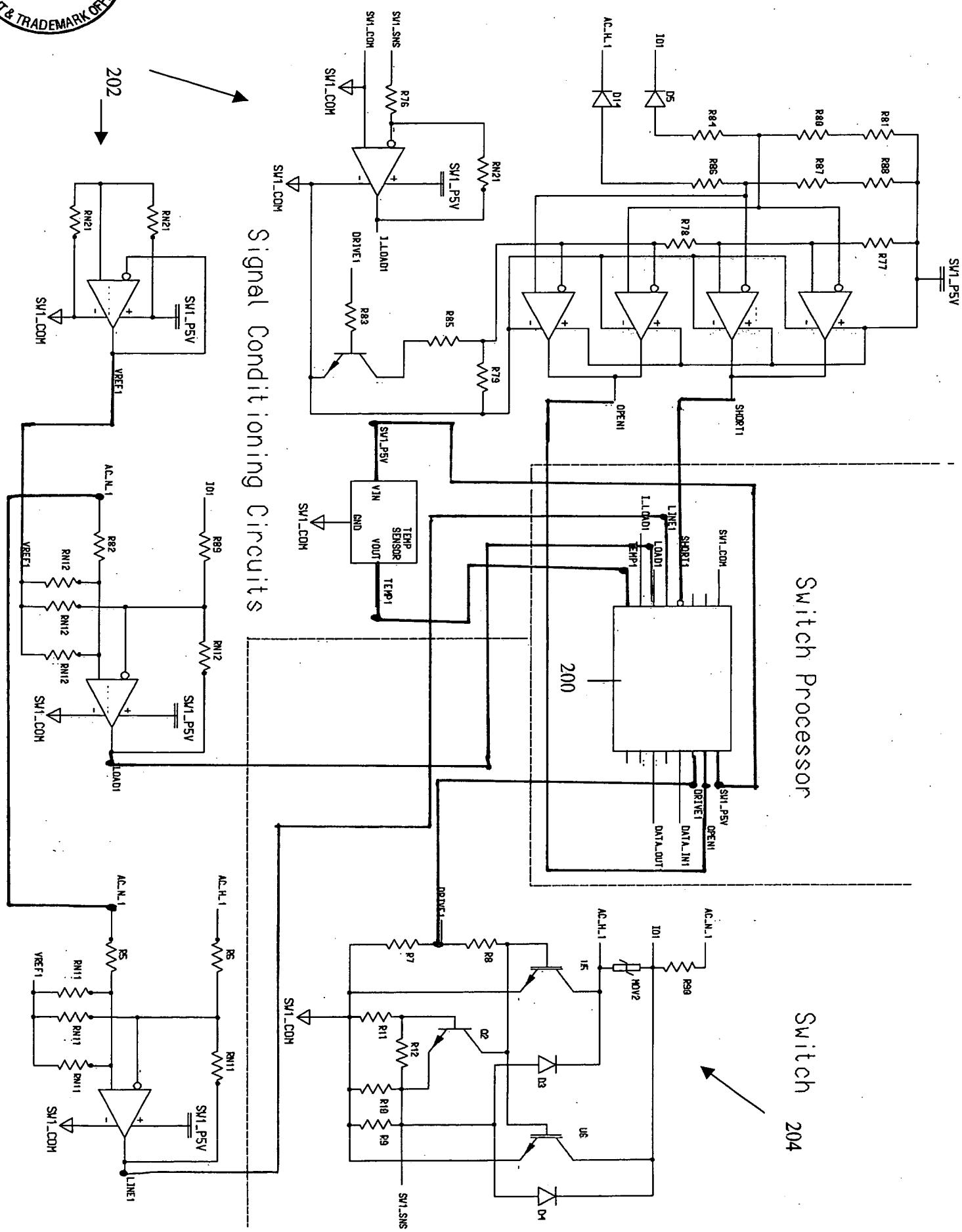

FIG. 4